

## Patent Abstracts of Japan

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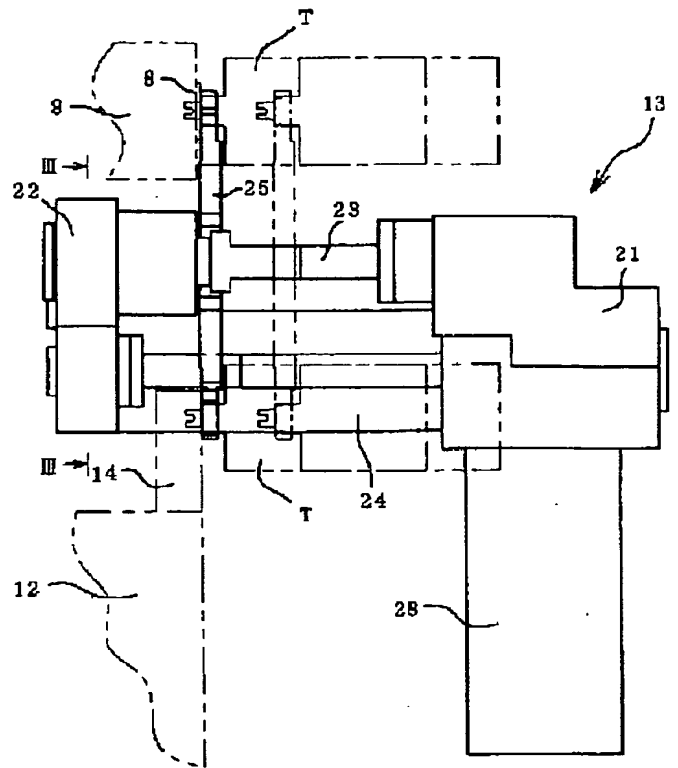
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TITLE : MACHINE TOOL WITH AUTOMATIC  
TOOL CHANGING DEVICE



**ABSTRACT :** PROBLEM TO BE SOLVED: To shorten tool changing time by closely-disposing a main shaft and a tool magazine, and shortening a changing arm without restricting the movable range of the main shaft, a tool changing position of the main shaft, and the number of stored tools in the tool magazine.

**SOLUTION:** This automatic tool changing device 13 is provided with an arm shaft 23 involving a changing arm 25, a driving motor 28, a converting mechanism which converts the rotation of the driving motor 28 into the advance and retreat movement of the arm shaft 25, a transmitting mechanism which transmits the rotation of the driving motor 28 to the arm shaft 25, and at least the driving motor 25 or the driving motor 25 and the converting mechanism are disposed at forward side which is a more distant position from a main shaft 8 and a tool magazine 12 than the rotating plane of the changing arm 25.

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